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TITLE: What's Love Got T Do With It? Quantifying the Risk of HIV

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BACKGROUND/OBJECTIVES: In addition to condom use, other HIV prevention approaches are associated with different risks and benefits and would provide more choices to people. We used decision analyses to estimate the relative risks of acquiring HIV on the basis of a person's choice of (a) sex act, (b) condom use, (c) partner's likelihood of being infected, and (d) partner's HIV test history.

METHODS: Based on literature review, the assumptions were: (a) relative risk (RR) of acquiring HIV from an HIV-infected partner through insertive fellatio (RR, 1, referent), receptive fellatio (RR, 2), insertive vaginal sex (RR, 10), receptive vaginal sex (RR, 20), insertive anal sex (RR, 13), receptive anal sex (RR, 100); (b) risk of condom failure (5%); (c) prevalence of HIV among heterosexuals (high risk [2%] low risk [0.25%]) and among men who have sex with men (high risk [0.25%]) and among men who have sex with men (high risk [20%], low risk [2.5%]); and (d) test sensitivity (98%) and specificity (99.8%) for calculating the predictive value of a recent negative test result. Threshold analyses were performed to analyze the robustness of our results.

RESULTS: Patterns emerged among the 100 combinations of choices. For example, unprotected sex with a partner who recently tested negative is half as risky as protected sex with a partner of unknown serostatus (for a given sex act). Unprotected receptive fellatio is half as risky as protected receptive anal sex (for a given partner). Protected receptive anal sex with a partner who recently tested negative is one-tenth as risky as protected receptive vaginal sex with a person of unknown serostatus. These results are fairly robust under a range of parameter estimates.

CONCLUSIONS: Although condoms are protective, choosing a partner with a recent negative HIV test result or a safer sex act would also reduce risk. Clarification of the risk of different activities allows people to make more informed choices about safer sex strategies.

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